

# NOTES 03: EXPERIMENTS & OBSERVATIONAL STUDIES

Stat 120 | Fall 2025  
Prof Amanda Luby

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## 1 Video Recap

Observational Study

Experiment

Confounding Variable

Table of Conclusions:

## 2 Experimental Design Principles

1. Control aspects of the experiment that we know may have an impact on the response, but are not the factors being studied
2. Randomize subjects to treatments to even out effects that we cannot control
3. Replicate over many subjects, or perhaps a different group of subjects

There are lots of different ways to design experiments following the randomize and replicate approach. Two that we'll see on in this class are:

Complete randomized design

Matched Pairs design

Some other (optional) things that can reduce bias in experiments:

Control group

Placebo group

Single-blind

Double-blind

### **3 Activity**

On moodle, navigate to the “Communicating Results Activity” and open the google slides presentation for further instructions.